

ABSTRACT OF THE DISCLOSURE**SELF-DEFINING DATA UNITS**

A mechanism is provided for storing self-defining data and mapping elements with either a fixed set of allowed structures or types or with the structures and types determined by rules. Recovery is enhanced by the use of backward and forward pointers between data and mapping elements for the data elements in the order written by the management algorithm. Recovery is also enhanced by the use of companion pointers with metadata. The companion pointers may include pointers to data or mapping elements that are part of the same structural grouping. The metadata may describe the structural grouping. The metadata may also include pointers to the previous and/or next versions of the same elements. Recovery of the data and/or mapping structures is achieved by the reverse application of the management algorithm.

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